Australian distributors:
Fisher Biotec Australia
free call: 1800 066 077
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web: www.fisherbiotec.com

ESCO PROtect

Esco PROtect
Model DG-2

A Completely Independent and Redundant Sample Monitoring System That Is A Critical Component To Provide Protection For Important Samples

PROtect Your Samples

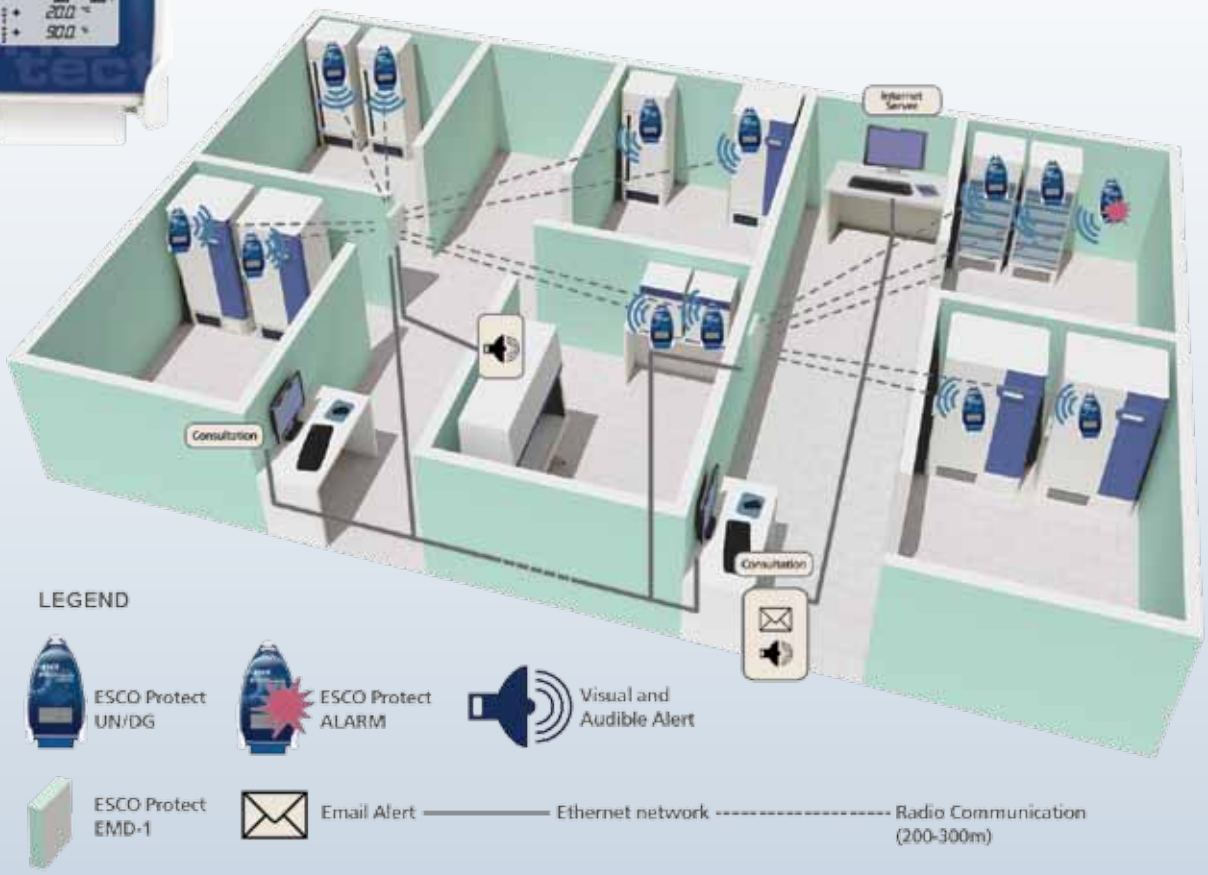
How can you assure that your samples are properly stored and protected?

What system are you currently using to secure your work?

Your samples are precious and every precaution has to be taken to PROtect their integrity. In case of severe failure, the Esco PROtect wireless monitoring system can monitor your freezer, other cold storage system and other temperature controlled equipment to make sure your samples are maintained at the correct temperature.

What Esco PROtect Does?

Esco PROtect monitoring system includes radio frequency recorders which can be connected to any brands of freezer, cold storage system and temperature controlled equipment. These recorders automatically send data to a central server to monitor temperature and other parameters



How Esco PROtect Can Be Connected to Your Different Temperature Controlled Products?

Esco PROtect Wireless Monitoring System Key Benefits

A. Real Time Monitoring System

- Wireless Technology that protects your samples 24/7 with continuous data logging function and immediate alarm notifications
- Centralize monitoring for all your equipment (any brands and any models):
  - Temperature for refrigerators, freezers, cold chambers, cryogenic tanks and -80°C freezers.
  - Temperature and CO_2 for ovens/incubators.
  - Temperature and humidity for climatic chamber, ambient area
- Measurement and recording of physical parameters such as temperature, CO_2, and humidity.
- Direct reading on the display.
- As compared to Wi-Fi, radio frequency has longer battery life and transmission distance.
- In using the radio frequency, repeaters can be installed to extend the distance which cannot be easily done by some Wi-Fi system.

B. Simple and Cost Effectiveness

- Fast Installation, commissioning and maintenance.
- Can centrally monitor integrity of samples even during a power outage or electronic failure of refrigerator, freezer, incubator, oven, etc.
- Accurate and efficient compared to manual data readings.
- Reduce labor cost for manual data readings. Manual data readings are less accurate, less reliable and time consuming. Saves you time and money.
- Readily accessible thru the display or monitoring software thru PC.
- Multi-site installation.
- Interchangeable digital probes with embedded memory to facilitate maintenance procedures.
- Modern and eco-friendly.

C. Traceability and Security – Quality Assurance

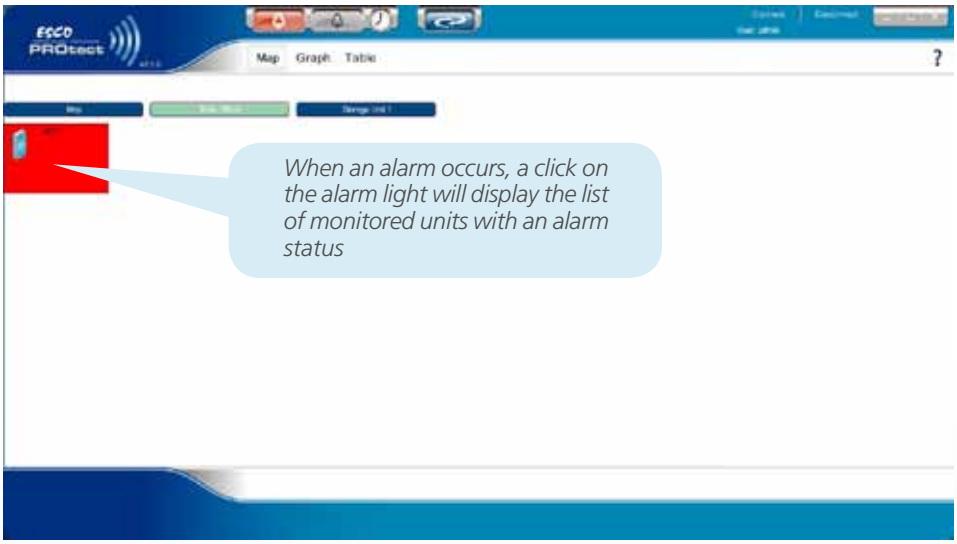
- Comply with quality assurance procedures: ISO 17025 and ISO 15189 norms, Good laboratory practices and local regulations recommend the use of tools to guarantee the reliability of your temperature controlled equipment (ultra-low temperature freezers, lab freezers, lab refrigerators, lab ovens, lab incubators, refrigerated incubators, CO_2 incubators, etc).
- Audit trail traceability for conformance to 21 CFR part 11
- Local regulations or recommendations within Quality Management Programs

ISO17025

ISO15189

D. Alarm Capabilities – Securing Your Sample

- Avoid loss of products
- Real time alarm management
- Visual and audible alert
- Remote alarm notification via E-mail

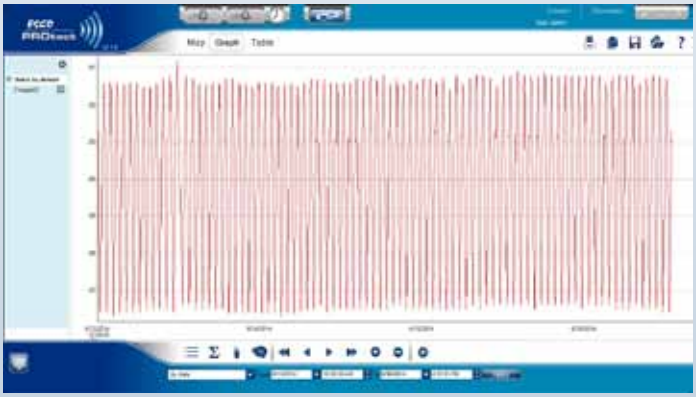

Map
Graph
Table
When an alarm occurs, a click on the alarm light will display the list of monitored units with an alarm status

E. Software System and PC Interface

- Remote visualization of data
- Downloaded database is presented in easy to understand reports or graphs
- PROtect software enables to visualize recorders located on the installation map and to manage your alarm

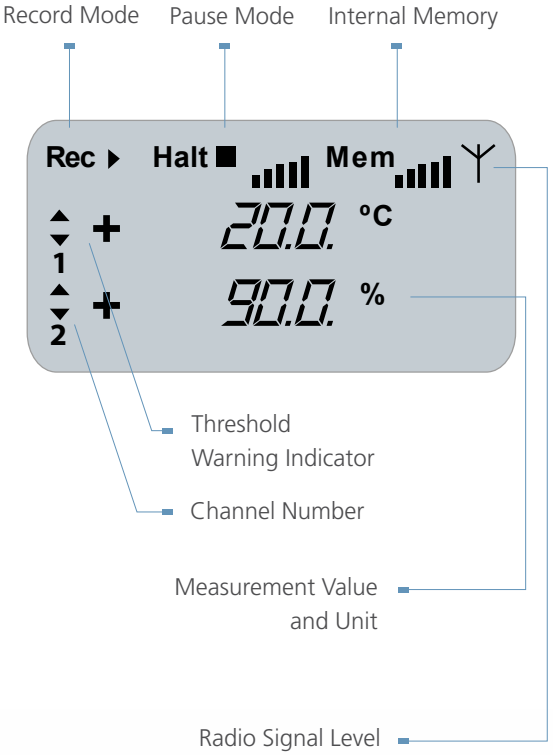
Esco PROtect Main Menu

Esco PROtect Datalogging



Esco PROtect Graph Function

PROtect System Components



Potential Users of Esco PROtect Wireless Monitoring System

- Hospitals
- Pharmaceutical Industry
- Blood Bank Centers
- Food Safety Laboratories
- Animal Testing Laboratories
- Drugstores
- Research Centers
- Bio-Banking and Repositories
- Private Clinical Laboratories
- Food Industries
- Universities/Academia
- Cosmetic Industry

System Requirements for PROtect Software

PROtect Server:
Computer Architecture: 32 bit and 64 bit
OS: Windows 2000, XP, Vista, Win 7 and Windows 2003-2008 Server
RAM: 3 GB (min)
HD: 250 GB capacity or higher
Video Card: VGA compatible 1280 X 1024 32 bit (minimum)

PROtect Client:
Computer Architecture: 32 bit and 64 bit
OS: Windows 2000, XP, Vista, Win 7 and Windows 2003-2008 Server
RAM: 2 GB (minimum)
HD: 1 GB capacity or higher
Video Card: VGA compatible 1280 X 1024 32 bit (minimum)

PROtect Can Be Use on the Following Regions

- Europe – 868 Mhz
- Africa – 868 Mhz
- Asia – 868 Mhz
- India – 868 Mhz
- ANZ – 902 Mhz
- North America – 902 Mhz
- South America- 868Mhz/902 Mhz
- Middle East - 868 Mhz

** Currently not applicable for South Korea and Japan region*

Ordering Information

Modems, Relays and Alarm System

Product Image	Item Codes	Description	Features/Specification
	1081050 1081051	Esco PROtect UN-1 - 868 Mhz band - 902 Mhz band	• Single Channel RF Transmitter, -200 °C to + 400 °C; 4-20mA; 0.1V ; Dry Contact
	1081052 1081053	Esco PROtect UN-2 - 868 Mhz band - 902 Mhz band	• Dual Channel RF Transmitter, -200 °C to + 400 °C; 4-20mA; 0.1V ; Dry Contact
	1081054 1081055	Esco PROtect DG-1 - 868 Mhz band - 902 Mhz band	• Single Channel RF Transmitter, -40 °C to +80 °C / tH : -30 °C to +70 °C from 0 to 100% RH non-condensing
	1081056 1081057	Esco PROtect DG-1 - 868 Mhz band - 902 Mhz band	• Dual Channel RF Transmitter, -40 °C to +80 °C / tH : -30 °C to +70 °C from 0 to 100% RH non-condensing
	1081058	Esco PROtect MD-1 - 868 Mhz band	• Connects to your PC, it enables communication with Esco PROtect UN/DG • Communicates with an unlimited number of recorders. • Remote alarm driven by integrated dry contact output (vocal telephonic transmitter, buzzer, light). • Software, PC or power supply failure alarm. • Can be used with or without Esco PROtect Relay.
	1081059	Esco PROtect MD-1 - 902 Mhz band	
	1081060	Esco PROtect EMD-1 - 868 Mhz band	• Enables Ethernet connection to maximize distances between recorders and PC servers
	1081061	Esco PROtect EMD-1 - 902 Mhz band	
	1081062	Esco PROtect RL-1 - 868 Mhz band	• Enables direct RF communication to maximize distances between recorders and PC servers. • Works with external power supply and supplied with a rechargeable battery. • Includes two power ranges: a) 25 mW to communicate with recorders b) 500 mW to communicate with Modem
	1081063	Esco PROtect RL-1 - 902 Mhz band	
	1081064	Esco PROtect AM-1 - 868 Mhz band	• Provides real time warning if a problem occurs • Integrated sound and visual alarm. • Works with an external power supply and supplied with a backup battery. • Push button for local alarm acknowledgement. • Relay output to trigger remote alarm (vocal telephonic transmitter) • Warns Esco PROtect software when the battery is low.
	1081065	Esco PROtect AM-1 - 902 Mhz band	

Options and Accessories

Product Image	Item Codes	Description	Features/Specification
	1081070	PROtect Software and Dongle	• Remote visualization of data. • Downloaded database is presented in easy to understand reports or graphs. • PROtect software enables to visualize recorders located on the installation map and to manage your alarm. • Compliant with FDA (CFR 21 part 11) *Note: PROtect software and dongle needs to be installed even if one (1) PROtect recorder (UN or DG) is connected to the equipment.*
	1081071	Audible and Visual Alarm Device	• Warns if a problem occurs. • Works with an external power supply. • Connects directly to PROtect Modem or to PROtect Alarm. • Audible and visual Alarm.
	1081072	PT100 Probe	• Type of probe: Pt 100 Class B • Measurement range: -200 °C to + 260 °C • Type of cable: 3 wires (3m)
	1081073	Digital Temperature Probe	• Type of probe: Dallas • Measurement range: -40 °C to + 80 °C (-45 °C max) • Type of cable: flat 3m cable • Embedded memory for gauging parameters storage
	1081075	Battery for Recorders	• Lithium Battery
	1081076	PROtect CO_2 Probe	• Measurement range : 0 – 20% • Output : 4-20 mA • Mounting : Wall mounting bracket supplied • Supply: 230VAC
	1081078	Power supply for USB Modem, Ethernet Modem and Alarm System	• Power Supply for MD-1, EMD-1, AM-1
	1081079	Power Supply for Relay	• Power suppy for RL-1
	1081080	Universal Adaptor Cable for CO_2 and DP sensors	• (5m) with connector IP67 for PROtect UN and DG.
	1081081	Digital Temperature/ Humidity Probe	• Measurement range : -40 +80 °C /0 100%HR • Type of probe for T°: Pt 1000 • class A • Accuracy: ±2%HR from 0 to 90%HR ±3%HR from 90 to 100%HR • Power: delivered by the SPYRF recorder

General Specifications

	Esco PROtect UN	Esco PROtect DG
Measurement Range	From -200 °C to + 400 °C / 4-20mA / 0-1V /dry contact	t : -40 °C to +80 °C / tH : -30 °C to +70 °Cfrom 0 to 100% RH non-condensing
Channel Number	1 or 2	1 or 2
Resolution	0,1°C	0,1°C
Operating Conditions	From -30 °C to +70 °C	From -30 °C to +70 °C
Power Supply	Lithium battery	Lithium battery
Battery Lifetime	2 years - Replaceable	2 years - Replaceable
Type of Input	External (Pt 100/Pt 1000/4-20mA/0-20mA/0-1V/dry contact)	External (temperature, relative humidity and dry contact)
Recording Interval	1 second to 90 minutes	1 second to 90 minutes
Internal Memory	20 000 measurements	20 000 measurements
Radio Range	300 m	300 m
Radio Bande	868 Mhz or 902 Mhz ISM	868 Mhz or 902 Mhz ISM
Power	25 mW	25 mW
Digital Display	Yes	Yes
Dimension	123x69x35 mm	123x69x35 mm
Protection Index	IP65	IP65
Conformities	EN 12 830, ROHS, CE, FCC, ETS 300-220	EN 12 830, ROHS, CE, FCC, ETS 300-220
Included	User manual, wall-mounting bracket and cable input protection	User manual, wall-mounting bracket and cable input protection

Biological Safety Cabinets and laminar Flow • Laboratory Fume Hoods • Laboratory Ovens
Laboratory Incubators • PCR Thermal Cyclers • Microplate Shaker/Incubators • Ultraflow Freezers

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